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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,889	07/11/2001	Kyo Akagi	500.40346X00	7872

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EXAMINER

NEGRON, DANIEL L

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,889

Applicant(s)

AKAGI ET AL.

Examiner

Daniell L. Negrón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-9 and 13-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,5-9 and 14-18 is/are allowed.
- 6) ☒ Claim(s) 13 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on July 11, 2001 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

Furthermore, the substitute information disclosure statement submitted via fax on February 19, 2004 has been initialed and signed by the Examiner. Accordingly, the listed information shall be printed on the face of any patent that may issue from the present application.

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Apparatus for Latching a Magnetic Disk.

Claim Objections

2. Claim 19 is objected to because of the following informalities:

On line 4 of claim 19, the recitation "...said movable part" lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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2. Claims 13 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hishikawa et al U.S. Patent No. 5,157,566.

Regarding claim 13, Hishikawa et al disclose a magnetic disk apparatus comprising a magnetic disk (110) for writing information thereon and means for rotating the magnetic disk (i.e. spindle motor, 120).

Hishikawa et al also disclose a magnetic disk apparatus comprising a magnetic head provided so as to face a surface of the magnetic disk and an actuator for positioning the magnetic head in a predetermined track on the magnetic disk (not shown, column 1, lines 12-21).

Hishikawa et al also disclose a magnetic writing/reading circuit for enabling the magnetic head to write/read information along the track and an interface for sending/receiving information and a signal for controlling the information to/from outside the magnetic disk device. Furthermore, the reading/writing circuit is inherently present since conventional magnetic disk drives require a writing/reading circuit in order to record and reproduce information to and from the magnetic disk surface.

Hishikawa et al also disclose an interface for sending/receiving information and a signal for controlling the information to/from outside the magnetic disk device. Furthermore, an interface for sending/receiving information is inherently present since it is required in conventional disk drives in order to provide information transfer between the disk drive and the host.

Finally, Hishikawa et al disclose a magnetic disk apparatus wherein the rotation of the magnetic disk (110) is stopped after a predetermined time lapsed from completion of information

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reading/writing and thereafter a process to latch the magnetic disk (110) or the magnetic disk rotating means is performed (column 4, line 60 through column 5, line 20).

Regarding claim 19, Hishikawa et al disclose a magnetic disk apparatus wherein a latching mechanism (100) is used to latch the magnetic disk (110) and the latching mechanism comprises a small motor comprising a coil and a magnet and a member for coming into contact with a movable part to hold it (column 2, line 66 through column 3, line 14).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hishikawa et al U.S. Patent No. 5,157,566 in view of Malek U.S. Patent No. 4,903,157.

Regarding claim 20, Hishikawa et al disclose a magnetic disk apparatus with all the limitations of claim 13 as discussed above but fail to show a latching mechanism comprising an electromagnet.

However, Malek discloses a magnetic head latching mechanism for a magnetic disk apparatus in which an electromagnet is used to hold or latch the magnetic head away from the magnetic disk when said apparatus is not in operation (col. 2, lines 48-68 and col. 3, lines 1-7).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the magnetic disk apparatus as disclosed by Hishikawa et al with the latching mechanism as taught by Malek so as to use an electromagnet in place of

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permanent magnets in order to latch the magnetic head away from the magnetic disk with a mechanism that is more compact and lightweight.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hishikawa et al U.S. Patent No. 5,157,566 in view of Jang U.S. Patent No. 6,061,207.

Regarding claim 21, Hishikawa et al disclose a magnetic disk apparatus with all the limitations of claim 13 as discussed above but fail to show a latching mechanism comprising a mechanism in which a bimetal is used.

However, Jang discloses a magnetic head latching mechanism for a magnetic disk apparatus in which a bimetal is used to hold or latch the magnetic head away from the magnetic disk when said apparatus is not in operation (col. 2, lines 5-26).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the magnetic disk apparatus as disclosed by Hishikawa et al with the latching mechanism as taught by Jang so as to use a bimetal in place of permanent magnets in order to latch the magnetic head away from the magnetic disk with a mechanism that does not release the magnetic disk due to external impact.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hishikawa et al U.S. Patent No. 5,157,566 in view of Yaeger et al U.S. Patent No. 4,996,617.

Regarding claim 22, Hishikawa et al disclose a magnetic disk apparatus with all the limitations of claim 13 as discussed above but fail to show a latching mechanism comprising a mechanism in which a shape memory alloy is used.

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However, Yaeger et al discloses a magnetic head latching mechanism for a magnetic disk apparatus in which a shape memory alloy is used to hold or latch the magnetic head away from the magnetic disk when said apparatus is not in operation (col. 5, lines 25-50).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the magnetic disk apparatus as disclosed by Hishikawa et al with the latching mechanism as taught by Yaeger et al so as to use a shape memory alloy in place of permanent magnets in order to latch the magnetic disk with a mechanism that is less power consuming and more compact having less electrical or mechanical components.

Allowable Subject Matter

1. Claims 1, 2, 5-9, and 14-18 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 1, prior art of record fails to teach or suggest a magnetic disk apparatus comprising a detection means for detecting whether or not the magnetic disk is being rotated with a latching mechanism to latch a movable part of the magnetic disk or the spindle motor on the basis of detection result of the detection that the magnetic disk is not being rotated.

Regarding claim 9, prior art of record fails to teach or suggest a magnetic disk apparatus comprising a latching mechanism to latch a movable part of the magnetic disk or the spindle motor unlatching the movable part when a specific command for reading/writing information from/onto the magnetic disk is issued from the information processing device and latching the movable part again after processing of the specific command is completed and the rotation of the magnetic disk is stopped.

Response to Arguments

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1. Applicant's arguments with respect to claim 13 have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniell L. Negrón whose telephone number is 703-305-6985. The examiner can normally be reached on Monday-Friday (8:30-6:00) Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on 703-308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DLN 
February 20, 2004


DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
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